

## CLAIMS

What is claimed is:

1. A device comprising:

a decoder control circuit for controlling an MPEG decoder, structured to decode several coded images in a plurality of periods, the decoder control circuit receiving, at a beginning of each period, an order to decode a plurality of images of a first or of a second type, the images of the second type being decodable at any time during the period following their decoding command, and the images of the first type being decodable at any time during the two periods following their decoding command, including a priority assignment circuit structured to, at each period, grant among the images a decoding priority to any of the images of the first type that still have not been decoded one period after their decoding order, otherwise, if there are any, to the images of the second type.

2. The device according to claim 1, wherein the decoder control circuit further includes a pointer memory for storing the beginning addresses of each of the images to be displayed.

3. The device according to claim 1, wherein said decoder control circuit further includes a safety circuit for adding a predetermined header before each image provided to the decoder so that two images put end to end cannot form a code that causes a malfunction of the decoder.

4. The device according to claim 3, wherein the device includes the MPEG decoder, and the MPEG decoder is connected to the decoder control circuit.

5. The device according to claim 1, further comprising:

a memory that stores coded data and decoded data;

a first bus that connects the decoder control circuit to the memory;

a display control circuit connected between a screen and the first bus; and  
a microprocessor connected by a second bus to the decoder control circuit and the display control circuit.

6. The device according to claim 1, wherein the images of the first type are interlaced complete images, and the images of the second type are interlaced half-images.

7. The device according to claim 1, wherein the images of the first type are interlaced complete images, and the images of the second type are interlaced half-images or non-interlaced complete images.

8. A method for prioritizing MPEG images to be decoded, comprising:  
receiving first and second image sequences of coded images, each coded image having an image type that is one of a plurality of image types;  
receiving a stream of decoding commands in a series of synchronizing periods, each decoding command corresponding to a respective one of the coded images;  
adding each decoding command to a priority list;  
prioritizing the decoding commands by assigning to each decoding command a priority level based on the image type of the coded image corresponding to the decoding command;  
decoding the coded images in a priority order based on the priorities assigned to the coded images, thereby producing first and second images sequences of decoded images; and  
displaying the first and second image sequences.

9. The method according to claim 8 wherein the plurality of image types includes first and second images types and prioritizing the decoding commands comprises:

assigning a higher priority to a first decoding command corresponding to a coded image of the first image type than to a second decoding command corresponding to a coded image of the second image type if the second decoding command has been on the list for less

than one synchronizing period and otherwise assigning a higher priority to the second decoding command than to the first decoding command.

10. A method for decoding a plurality of MPEG sequences simultaneously using a single MPEG decoder, comprising:

receiving first and second image sequences of coded images;

receiving a stream of decoding commands, each decoding command corresponding to a respective one of the coded images;

prioritizing the coded images;

decoding the coded images using the single MPEG decoder, thereby producing decoded images of first and second images sequences;

saving the decoded images.

11. The method according to claim 10 wherein the decoding commands are received in a series of synchronizing periods and prioritizing the coded images includes, during each synchronizing period, prioritizing the decoding commands received in the synchronizing period.

12. The method according to claim 11 wherein prioritizing the coded images includes, during each synchronizing period, assigning a lower priority to the decoding command received during the synchronizing period than to any decoding command received in a prior synchronizing period.

13. The method according to claim 11 wherein the coded images include first and second sets of coded images and wherein the coded images of the first set are decoded during the synchronizing period in which the decoding commands corresponding to the coded images of the first set are received and the coded images of the second set are decoded during a synchronizing period subsequent to the synchronizing period in which the decoding commands corresponding to the coded images of the second set are received.

14. The method according to claim 11 wherein the coded images include a first coded image of a first image type and second coded image of a second image type, wherein prioritizing the coded images includes:

assigning a higher priority to the first coded image than to the second coded image if the decoding command corresponding to the first coded image was received in a synchronizing period prior to the synchronizing period in which the decoding command corresponding to the second coded image was received.

15. The method according to claim 14 wherein the first image type is an interlaced complete image.

16. The method according to claim 14, wherein said second type of image is an interlaced half image or a non-interlaced complete image.

17. The method according to claim 10 wherein the coded images are read from a memory device and the decoded images are saved to the memory device.